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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/856,531	07/03/2001	Satoshi Matsumoto	2001-0600A	9158

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EXAMINER	
LEO, LEONARD R	
ART UNIT	PAPER NUMBER
3753	22

DATE MAILED: 12/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/856,531	MATSUMOTO ET AL.	
	Examiner	Art Unit	
	Leonard R. Leo	3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21 and 23-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *21,23-26* is/are allowed.

6)☒ Claim(s) *27-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 30, 2003 has been entered.

Claims 22 and 33-38 are cancelled, and claims 21 and 23-32 are pending.

Drawings

Figure 8 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 30 and 32 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Furukawa et al (Figures 6-7 and 10).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawai et al.

Kawai et al discloses all the claimed limitations except coating with solder paste.

By definition, brazing is joining by hard solder. Further, the specific application of the bonding material is considered to be an obvious design choice producing no new and/or unexpected results and solving no stated problem. Bonding material is known in the art to have many forms: sheets, liquid, paste, wires, etc.

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawai et al in view of Katagiri et al.

Kawai et al discloses all the claimed limitations except the plates being coated via a mask.

Katagiri et al discloses a plate heat exchanger comprising a plurality of plates 12, 13, having passageways 3, 8, wherein an adhesive material (i.e. broadly read as solder, braze or epoxy) is applied to the plates via a silk screen or print mask for the purpose of precisely coating the plate with minimal waste for the purpose of ease of manufacture and assembly.

Since Kawai et al and Katagiri et al are both from the same field of endeavor and/or analogous art, the purpose disclosed by Katagiri et al would have been recognized in the pertinent art of Kawai et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Kawai et al an adhesive material (i.e. broadly read as solder, braze or epoxy) applied to the plates via a silk screen or print mask for the purpose of precisely coating the plate with minimal waste for the purpose of ease of manufacture and assembly as recognized by Katagiri et al.

Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa et al in view of Matsunaga et al.

Furukawa et al discloses all the claimed limitations except thicker partition plates.

Matsunaga et al (Figure 5) discloses a plate heat exchanger comprising a plurality of first passageway plates 2 and second passageway plates 4 and thicker partition plates 3 for the purpose of withstanding higher operating pressures without deformation.

Since Furukawa et al and Matsunaga et al are both from the same field of endeavor and/or analogous art, the purpose disclosed by Matsunaga et al would have been recognized in the pertinent art of Furukawa et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Furukawa et al thicker partition plates 3 for the purpose of withstanding higher operating pressures without deformation as recognized by Matsunaga et al.

Allowable Subject Matter

Claims 21 and 23-26 are allowed.

Response to Arguments

The anticipatory rejections in view Damsohn et al and Matsunaga et al are withdrawn.

Although there is nothing novel about creating discrete passageways to improve heat exchange, the prior art of record does not disclose a plate heat exchanger where a first set of plates has a single partition member forming only two passageways and a second set of plates has only a single passageway.

Applicants' remarks with respect to Kawai et al are not persuasive. The abstract and constitution of Kawai et al do not disclose "burrs can be eliminated by heating." If applicants are in possession of a certified English translation, then the Examiner requests a copy. Applicants' remarks are not commensurate in scope with the claims. The method claims do not recite whether or not burrs are present after the heating step. Kawai et al discloses a brazing filler material disposed on one side of the pressed plate. There is no novelty in applying the brazing material on one side versus the other side of the plate. During the directional stacking of Kawai et al, where the brazing material will be on one side of the plates, the brazing material will be adjacent one side of one plate while being adjacent to the other side of an adjacent plate. Thus, there will only be a single layer of brazing material between adjacent stacked plates. As previously noted, the Examiner stated for the record that brazing is soldering and that the "solder" material has many forms such as sheets, liquid, paste, wires, etc. Applicants did not seasonably challenge this fact. As claimed, the burrs 8 (i.e. on the second surface) of plates 4 are oriented in the same direction.

The secondary reference of Katagiri et al teaches one of ordinary skill in the art to apply an adhesive material (i.e. broadly read as solder, braze or epoxy) via a silkscreen or print mask

for the purpose of precisely coating the plate with minimal waste. Applicants did not traverse this modification and therefore is deemed to be correct.

Applicants' remarks with respect to Furukawa et al are not persuasive. Applicants' remarks are not commensurate in scope with the claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The claims do not recite "U-shaped turning portions" having a "non-rectangular shape." In fact, four out of five drawings disclose the "rectangular shape." Therefore, a "U-shaped turning portion" broadly encompasses both types. Further, the recitation of "substantially uniform width along a lengthwise direction" does not support the above reading. As such, any part of the passageway 21A of Figure 7 in the longer dimension of the plate has a "substantially uniform width."

The secondary reference of Matsunaga et al teaches one of ordinary skill in the art to employ thicker partition plates 3 for the purpose of withstanding higher operating pressures without deformation. Applicants did not traverse this modification and therefore is deemed to be correct.

Conclusion

Applicant is reminded of his duty to disclose under 37 CFR § 1.56, which states in part:

Duty to disclose information material to patentability.

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose

information exists with respect to each pending claim until the claim is cancelled or withdrawn from consideration, or the application becomes abandoned.

It is noted Matsunaga et al, Kawai et al and Katagiri et al are commonly assigned to Matsushita, where the representation in Matsunaga et al is the same as applicants. The Examiner requests any and all pertinent prior art known by applicants, assignee and representatives.

Conclusion

Any inquiry of a general nature, relating to the status of this application or clerical nature (i.e. missing or incomplete references, missing or incomplete Office actions or forms) should be directed to the Technology Center 3700 Customer Service whose telephone number is (703) 306-5648. Status of the application may also be obtained from the Internet: http://pair.uspto.gov/cgi-bin/final/home.pl

Any inquiry concerning this Office action should be directed to Leonard R. Leo whose telephone number is (703) 308-2611.

LEONARD R. LEO
PRIMARY EXAMINER
ART UNIT 3753

December 13, 2003